EVR COST ANALYSIS SPREADSHEET AS OF OCTOBER 16, 2002

CHANGES TO COST ANALYSIS SINCE MARCH 29TH TECH REVIEW REPORT

1 Corrected Equipment Costs by replacing 0.25 with 0.88 on Summary worksheet to correct error in original cost analysis. This change increased equipment costs by a factor of 3.5 as compared to the Feb. 2000 EVR staff report.

	Present Value Annualized Costs (AC)	
Year 1	(AC)	= (AC)
Year 2	(AC)(1/[1+ i])	= (AC)(0.91)
Year 3	(AC)(1/[1+ i]^2)	= (AC)(0.83)
Year 4	(AC)(1/[1+ i]^3)	= (AC)(0.75)

Assume 25% of stations upgrade to EVR in each year

Total Annual Equipment cost = (0.25)(AC) + (0.25)(AC)(0.91) + (0.25)(AC)(0.83) + (0.25)(AC)(0.75)
= (0.25)(AC) + (0.23)(AC) + (0.21)(AC) + (0.19)(AC)
= (0.88)(AC)

2 Reduced R&D and certification costs by halving the number of expected certified systems:

Phase I	was 14	now 7
Phase II	was 64	now 32
ISD	was 16	now 8

3 Increased ISD "worst-case" equipment costs based on 6/13/02 Veeder-Root e-mail

	tech rev	now
TLS-350ISD	$4,500	$3,995
Dispenser Interface		$670
Pressure sensor	$750	$595
Flow sensor	$900	$885
Inventory sensor	not incl	$1,095

	GDF1	GDF2	GDF3	GDF4	GDF5
EVR Tech Review	$6,150	$6,600	$7,950	$9,300	$10,650
Now	$8,883	$9,625	$10,656	$11,980	$13,308

4 Reduced ISD installation costs based on 4/15/02 Veeder-Root comment letter

EVR ISOR was $1230 per dispenser
EVR Tech Review doubled cost to $$2560 per dispenser

Veeder-Root costs based on experience in installing ISD at nine sites ($55/hr):
Two line items: Base install per facility and per-dispenser install

	Base	Per Dispenser	Example: GDF 3
New	$250	$125	$250 + 3 x $125 = $625
Retrofit	$300	$200	$300 + 3 x $200 = $900

The higher retrofit costs were used for the cost analysis.

5 Revised ISD maintenance/calibration/repair costs

EVR ISOR did not include these costs
EVR Tech Review assumed $1200/yr as suggested by Glenn Co. APCD

Veeder-Root suggests costs depend on number of ISD components

	Unit Cost		GDF1	GDF2	GDF3	GDF4	GDF5
A/L sensor	$300						
Pressure sensor	$200						
Datalogger	$50	TOTAL	$550	$700	$1,150	$1,600	$2,050

6 Revised ISD emission reductions from 6.6 to 8.5 tons/day as calculated in tech review report.

7 Revise ORVR emission reductions from 6.3 to 4.5 tons/day as calculated in tech review report.

8 Adjust ISD costs to 1999 Dollars

The original EVR cost analysis was in terms of 1999 dollars. The ISD costs are in terms of 2001 dollars. The ISD costs have been adjusted to 1999 values by 0.94.
This is the ratio of the 1999 Consumer Price Index (CPI) to the 2001 CPI (166.6/177.1 = 0.941).

9 Update to 1999 Gasoline Throughput

The original EVR cost analysis used the 1997 total CA Gasoline throughput of 13.5 billion gallons.
The throughput has been updated to the 1999 total CA gasoline throughput of 14.5 billion gallons

10 Added costs for annual balance station field testing

Currently, balance systems are required in most districts to be tested every five years. EVR will require annual testing of balance systems as part of ISD maintenance & calibration. Costs are estimated at $500 annually, as estimated by the SCAQMD vapor recovery rule staff report.

11 Clarified number of dispensers vs. number of fueling points for input variable table on summary page.

For example, the original table denoted 2 dispensers for GDF1, but this is intended to be 1 dispenser with two fueling points as denoted in Table 2-12 of ISOR reference 26, USEPA Phase II Technical Guidance

12 Revised Phase I Equipment and Installation Costs

Cost data from site upgraded to EVR Phase I in summer 2002 used to revise Phase I cost esimates:

Equipment Cost changes:

a) revise cost of P/V valve from $65 to $80
b) double number of spill containers from 2.5 to 5 to include both vapor and liquid sides
c) revised cost of spill container from $351 to $390 (includes one pump for draining)
d) revised cost of drop tube/overfill protection from $178 to $400
e) double number of adaptors from 2.5 to 5 to include both vapor and liquid sides
f) revised cost of adaptor from $55 to $219 (includes caps and service kit)

Installation Cost changes:

a) revise installation cost of P/V valve from $80 to $16
b) revise installation cost of spill container from $160 to $190 (assume 5% direct burial replacement)
c) revise installation cost of overfill protection and other tank parts from $160 to $155
d) revise installation cost of adaptor from $80 to $41
e) add post-installation tank testing cost - $131

13 Revised Summary Sheet to reflect ISD Exemption for GDF1